

Interpreting Expressions

1. Write algebraic expressions for each of the following:

a. Multiply n by 5 then add 4.

b. Add 4 to n then multiply your answer by 5.

c. Add 4 to n then divide your answer by 5.

d. Multiply n by n then multiply your answer by 3.

e. Multiply n by 3 then square your answer.

2. Imagine you are a teacher. Decide whether the following work is correct or incorrect.
If you see an error:

a. Cross it out and replace it with a correct answer.

b. Explain the error using words or diagrams.

$$2(n + 3) = 2n + 3$$

$$\frac{10n - 5}{5} = 2n - 1$$

$$(5n)^2 = 5n^2$$

$$(n + 3)^2 = n^2 + 3^2 = n^2 + 9$$

Interpreting Expressions

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a. Multiply n by 5 then add 4.

$$5n + 4$$

b. Add 4 to n then multiply your answer by 5.

$$5(n + 4)$$

c. Add 4 to n then divide your answer by 5.

$$\frac{4+n}{5}$$

d. Multiply n by n then multiply your answer by 3.

$$3n^2$$

$$3 \cdot n \cdot n$$

e. Multiply n by 3 then square your answer.

$$(3n)^2$$

2. Imagine you are a teacher. Decide whether the following work is correct or incorrect. If you see an error:

a. Cross it out and replace it with a correct answer.

b. Explain the error using words or diagrams.

$$2(n + 3) = 2n + \overset{6}{\cancel{3}}$$

$$2n + 6$$

$$c \quad \frac{10n - 5}{5} = 2n - 1$$

$$(5n)^2 = \overset{25}{\cancel{5}}n^2$$

$$(n + 3)^2 = n^2 + 3^2 = n^2 + 9$$

$$\quad \quad \quad \checkmark \quad \quad \checkmark$$

$$\quad \quad \quad 6n \quad \quad 6n$$

A $n \cdot 5 + 4$

~~$n \cdot 5$~~ + 4

$(5n) + 4$

$5n + 4$

$n(5) + 4$

~~$n(5 + 4)$~~

$n \cdot 5 + n \cdot 4 = 9n$

Mult. first, then add

add first, then mult

C. 1. $(4+n) \div 5$

~~2. $4+n \div 5$~~

3. $\frac{(4+n)}{5}$

4. $\frac{(4+n)}{5}$

• Who is right?

• What's the difference between 1 and 4?

• What's the difference between 3 and 4?

• Does everyone who has () need them?

• $2(n+3) = 2n+6$

• $\frac{10n-5}{5} = \frac{10n}{5} - \frac{5}{5}$
 $= 2n - 1$

~~$\frac{5(2n-1)}{5} = 2n-1$~~

~~$\frac{10n-5}{5} \dots$~~

• $(5n)^2 = 5^2 n^2 = 25n^2$
 $(5n)(5n)$

• $(n+3)^2 = (n+3)(n+3)$
 $n^2 + 3n + 3n + 9$
 $\boxed{n^2 + 6n + 9}$

FOIL

Double-distribute